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Japanese Government S&T Budget Proposal– JFY2011 An Increase of 2.1 percent from the previous year

This report memorandum, prepared by Kazuko Shinohara of NSF Tokyo Regional Office, summarizes JFY2011 S&T budget. Ms. Shinohara can be reached at nsftokyo@nsf.gov

An exchange rate of ¥80/\$ is used in this report memorandum.

Overview

The Japanese Government made public the S&T budget proposal for JFY2011 of ¥3,648.5 billion (\$45.6 billion), an increase of 2.1 percent from JFY2010. Most notable within the overall budget was a record 31% jump in funding for Grants-in-Aid for Scientific Research, unsolicited awards for individual investigator-led basic research. The budget gives priority to Green Innovation and Life Innovation, review of competitive funding system, and support for young researchers.

The proposed S&T budget for JFY2011, as for JFY2010, represents 0.75 percent of GDP. The breakdown of the S&T budget for JFY2011 by ministry and agency in Table 2 below shows that as much as 67 percent is going to be allocated to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), followed by 16.1 percent for the Ministry of Economy, Trade, and Industry (METI).

The Diet must approve the budget before it takes effect on April 1. While budget discussions in the current Diet have been delayed by contentious debate over political ethics, the budget is expected to pass with little change by the end of March.

Table 1: Science and Technology-related Budget

	JFY2010 Budget (¥Billion)	Proposed JFY2011 Budget (¥Billion)	Δ (¥Billion)	Δ(%)
S&T-related budget	3,573.5	3,648.5	75.0	2.1

Table 2: Science and Technology-related Budget by Ministry and Agency

Ministry/Agency	JFY2010 Budget (¥Billion)	Proposed JFY2011 Budget (¥Billion)	Δ (¥Billion)
Ministry of Education, Culture, Sports, Science and Technology (MEXT)	2,323.6	2,449.4	125.9
Ministry of Economy, Trade, and Industry (METI)	538.8	586.2	47.4
Ministry of Health, Welfare, and Labor (MHLW)	154.1	150.1	-4.1
Ministry of Agriculture, Forests, and Fisheries (MAFF)	125.1	113.8	-11.3
Ministry of Defense (MOD)	171.4	96.8	-74.5
Cabinet Secretariat	63.6	67.0	3.4
Ministry of Internal Affairs and Communications (MIC)	61.0	53.5	-7.4
Ministry of Land, Infrastructure, and Transportation (MLIT)	55.1	52.5	-2.6
Ministry of Environment (MOE)	38.0	39.2	1.2
Cabinet Office (CAO)	19.9	17.2	-2.7
Ministry of Foreign Affairs (MOFA)	11.8	11.6	-0.1
Ministry of Justice (MOJ)	6.4	6.4	0.1
Police Agency (PA)	2.4	2.2	-0.2
Ministry of Finance (MOF)	1.4	1.3	0.0
Diet	1.1	1.2	0.0

S&T Budget Process for JFY2011

For the past several years, the Cabinet Office has compiled S&T budgets by program or project from the request stage through ranking to the release of the government's final budget proposal. However, the JFY2011 budget-making process was far more complicated than in previous years because of several new policy inputs and passage of two supplemental budgets

while the JFY2011 proposal was in preparation. As a consequence, the Cabinet Office this year declined to compile a comprehensive list of S&T projects included in the final budget proposal. The S&T budget process included the following steps:

- June 2010: The Council for Science and Technology Policy (CSTP) presents 'Action Plan' providing for the first time very detailed guidelines with numerical targets for important S&T programs and projects under Green Innovation, Life Innovation, and Improvement of Competitive Funding System.
- July 2010: Government issues budget guidance to ministries and agencies that:
 - JFY2011 requests should be no more than 90 percent of their JFY2010 enacted budget
 - For review by the Ministry of Finance (MOF)
 - An additional formula-based request could be made for projects and programs that accelerate economic revitalization and contribute to realization of the ruling Democratic Party of Japan's (DPJ) reform platform
 - For review by a Diet committee
- September-October 2010: CSTP reviews and ranks S&T programs and projects submitted for the base requests according to scientific criteria (see <http://www.nsftokyo.org/rm10-05.pdf>).
- November 2010: A committee of Diet members reviews and ranks the additionally requested programs and projects by economic effect. This review includes all additional requests, not only S&T.
- November 2010: It turns out that the first and second supplemental budgets for JFY2010 support many of the S&T items included in the additional requests for JFY2011.
- November 2010: The Government Revitalization Unit (GRU) convenes to evaluate key government programs with an eye to cutting inefficiency, and recommends abolishing or reducing the budget of some S&T programs. Among these are several programs focused on internationalizing university research, which are criticized for overly vague goals and insufficient success metrics.
- December 22, 2010: Prior to the announcement of the Government's final JFY2011 budget proposal, Prime Minister Kan personally intervenes to reverse a proposed cut in S&T funding, arguing the strong connection between S&T investment and economic competitiveness.
- December 24, 2010: JFY2011 budget proposal is released.
- February 2011: Diet deliberations on the budget commence.

- The Diet session used to make negligible changes to the proposed budget, but the present situation in which the ruling camp does not hold a majority in the House of Councilors makes it difficult to predict if it will have a similar outcome as in the past. As of mid-February, the JFY2011 budget proposal is likely to pass the Diet by the end of March with little changes.

Highlights

- (1) The previously mentioned **31 percent increase in the Grants-in-Aid for Scientific Research** to ¥263.3 billion (\$3.29 billion) from ¥200 billion (\$2.5 billion) in JFY2010
- (2) New flexibility on **carry-over of unspent grant funds** from one fiscal year to the next rationalizing a system that has traditionally forced researchers to ‘use or lose’ all grant funds by the end of a given fiscal year
- (3) **Elimination of the Coordination Fund for Promoting S&T** (CFPST: sometimes referred to even in English by its Japanese name, *Shinko Chosei-hi*): Established in 1981, CFPST implements strategic priority programs in the areas identified by CSTP as priorities each year. With a JFY2010 budget of ¥29.6 billion (\$370 million), CFPST funds research in social system innovation to cope with climate change, acceleration of commercialization of research on health, safe and secure society, improvement of environment for young researchers to become independent, training of young researchers to create innovation, support for women researchers, personnel training in local areas, strategic promotion of S&T cooperation with other Asian and African countries, promotion of international cooperative research, and critical problems to be solved immediately such as natural disasters and infectious diseases. CFPST is funded within MEXT’s S&T budget and administered by the Japan Science and Technology Agency (JST). Some continuing CFPST projects will be carried by MEXT. A new fund named ‘S&T Strategic Promotion Fund’ will be established in JFY2011 with a budget of ¥8 billion (\$100 million). Details of the continuing projects and the nature of the new fund are being worked and will be made public later.

The Tables 3-8 below are NSF Tokyo excerpts of S&T budgets from the overall budget of some ministries. Each presented its budget as preferred, which makes it difficult to make year-to-year comparisons.

The colors in the Tables 3-8 show the following categories:

	Life Innovation
	Green Innovation
	System Reform
	Other major programs or projects

Table 3: Major S&T Programs and Projects in the Ministry of Education, Culture, Sports, Science and Technology (MEXT) Budget for JFY2011

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
Regenerative medicine	3,800	
Strategic promotion of next-generation cancer research	3,600	New
Strategic promotion of brain science research	3,590	
University-oriented green innovation creation program	2,000	New
Basic research program administered by the Japan Science and Technology Agency (JST): Advanced technologies for low carbon society	4,200	
Strategic initiative for climate change	1,040	
Ph. D. program to train researchers to develop world leaders in the relevant fields	3,900	New
Global COE program (no new solicitation; only to continue the programs already granted)	23,676	
Japanese universities to develop overseas: (1) Campus Asia, (2) Cooperation with U.S. universities	2,178	New
Networking to internationalize universities	2,900	
Improvement of environment to receive more foreign students (including new budget for short-term stays by foreign students)	31,874	
To send Japanese students overseas (including new budget for short-term visits)	1,908	
Postdoctoral fellowship	18,004	
Tenure track system	8,147	New
Strategic program for sending young researchers abroad to accelerate brain circulation	1,750	New
Training of research administrators	300	New
Support for women researchers	952	New
Super science high school	2,403	
Science partnership project	727	
Support for high school students to attend international S&T contests	289	

Training of undergraduates in science and mathematics	150	New
Support for science communication	581	
National Museum of Emerging Science and Innovation (Miraikan)	2,196	
Grants-in-Aid for Scientific Research (unsolicited basic research fund)	263,300	
Basic research program administered by JST	51,049	
FIRST (Funding Program for World-Leading Innovative R&D on Science and Technology)	17,500	
Strategic promotion of S&T	8,000	New
Strategic support for local area innovation	11,059	New
Bridge between basic science and commercialization	10,550	
WPI (World Premier International) program	8,125	
Science of policies on S&T and Innovation (J-SciSIP)	802	New
HPCI (High Performance Computing Infrastructure)	21,117	
J-PARC (Japan Proton Accelerator Research Complex)	16,928	
XFEL (X-ray Free Electron Laser) facilities	4,675	
SATREPS (S&T Research Partnership for Sustainable Development)	2,128	
Strategic International Cooperative Program	749	
Invitation of foreign researchers and networking	4,513	
Global observation satellites	25,433	
Ultra small-size satellites	287	
Small-size solid rocket	3,790	
Quazi-zenith satellites	1,288	
Operation of and scientific research on Kibo, Japanese module on ISS (International Space Station)	14,993	
HTV (H-II Transfer Vehicle)	19,784	
HTV-R (H-II Transfer Vehicle with return capability)	50	
Strategic promotion of international cooperation	757	
Successor of Hayabusa (asteroid explorer)	2,987	
ASTRO-H (sixth X-ray observation satellite)	3,008	
Bepi Colombo (mercury exploration project)	2,993	

Advancement of credibility of rockets and satellites	11,719	
Fast breeder reactor	40,221	
ITER (International Thermonuclear Exploration Research) program	11,395	
Nuclear non-proliferation and safeguards initiative	4,247	
Disposal of radioactive waste	28,877	
Nuclear and the society	12,673	
Antarctic observation	3,440	
Deep-sea drilling program at Nankai Trough	9,941	
Marine resource exploration	2,300	
Promotion of the use of marine resources	700	
Earthquake research headquarters	1,031	
Strategic project on disaster prevention at the time of earthquakes	1,956	
Earthquake and tsunami observation and monitoring system	1,290	
Elucidation of the mechanism of natural disaster	3,264	
Societal system for disaster prevention	1,251	

Table 4: Major S&T Programs and Projects in the Ministry of Economy, Trade and Industry (METI) Budget for JFY2011

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
Commercialization of daily life-support robots	1,990	
Comprehensive R&D project on cancer diagnosis and treatment in early stages	2,780	
Commercialization of stem cell technology	1,730	New
Support to the cooperation between hospitals and companies to develop and improve medical equipment	4,000	New
Global standardization of Japanese medical service	1,000	New
Digitization of medical information	1,500	New
Investment in the research facilities that promote green innovation to accelerate energy saving and CO2 mitigation	7,140	New
Solar energy generation system: next-generation highly functional technology development	5,980	

Power semiconductor project	4,020	New
Ultra-low electric power device project	5,350	New
Innovative ultra-light and highly-strong materials	2,740	New
Next-generation printing electronics material processing technology development	2,370	New
Green sustainable chemical processing technology development	3,580	
Frontier basic research to produce innovative batteries	3,000	
Strategic technology development for commercializing next-generation battery system	2,480	
Tsukuba Innovation Arena: world-level nanotechnology research facilities and personnel under one roof	2,990	
Next-generation energy and social system demonstration projects	14,920	New
Next-generation energy technology demonstration projects	3,200	New
International energy consumption efficiency technology and system demonstration	19,000	New
Measurement of CO2 emission in developing countries	5,200	
Infrastructure for carbon credits between two countries	240	New
Contribution to APEC's low carbon initiative	330	
Support for introducing solar panel to housing	49,430	
Support for introducing clean energy automobiles	26,700	
Support for introducing fuel cell in daily life	8,670	
Support for introducing energy-efficient housing system	7,000	
Measures to secure safety of nuclear power plants	111,020	
Next-generation light-water reactor R&D	2,100	
New-type reactor R&D	7,390	
Advanced processing of spent fuel	2,280	
Support for exploration of oil, gas, and metals	8,500	
Research on oil and gas obtained in Japan	16,140	
Methane hydrate development	8,930	
Support for advancement of stable oil supply	10,050	
R&D on rare earth alternatives and reduced use of rare earth	12,740	
Support for industrial facilities that use rare earth	42,000	

Acceleration of developing rare earth mines	1,980	
Investment in the Japan Oil, Gas and Metals National Corporation (JOGMEC)	30,000	
Support for introduction of low-carbon facilities and equipment	44,560	
Subsidies to small- and medium-size companies for their efforts of decreasing CO2 emission	4,400	New
Support for accelerating regenerative energy use	3,500	New
New innovative energy-saving technology development	10,200	
Personnel training for managing infrastructure system in developing countries	2,590	New
Comprehensive R&D center in Japan that covers the whole Asia	2,500	New
Preparation for establishing an Asia-region R&D center in Japan	660	New
International R&D in environmental and medical fields to develop the technologies to other Asian countries	2,440	New
R&D on world-level small-sized earth observation satellite system	3,600	New
Strategic international standardization project	1,400	New
Next-generation highly reliable and energy-saving IT base technology development	1,580	

Table 5: Major S&T Programs and Projects in the Ministry of Health, Labor, and Welfare (MHLW) Budget for JFY2011

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
R&D on difficult diseases and cancer	5,700	New
R&D on innovative cancer treatment	1,300	New
Clinical medical test centers to produce innovative new drugs and medical equipment	3,300	New
R&D on frontier medical technologies	4,300	New
Medical information database	370	New
Commercialization of robots and other tools to help elderly people	83	New

Table 6: Major S&T Programs and Projects in the Ministry of Agriculture, Forestry, and Fisheries (MAFF)

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
Commercialization of agri-health	605	
Technologies to mitigate the risk caused by bird flu, mad cow disease, and mouth and hand disease	654	
Technology development on recycling-based farming to cope with climate change	1,446	
Prediction and control technology development on the damage on fisheries in coastal area by analyzing marine microorganisms	141	
Technology development of biomass use to activate local areas	940	
Technology development to analyze and evaluate functions of agricultural, forestry, and fisheries products and foods	475	
Technology development to commercialize new policies on agriculture, forestry, and fisheries	5,151	

Table 7: Major S&T Programs and Projects in the Ministry of Internal Affairs and Communications (MIC) Budget for JFY2011

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
Strengthening of international competitiveness of ICT (information and communication technologies) industries	41,320	
Green ICT (information and communication technology): More than 10 percent cut of CO2 emission by ICT	2,820	

Table 8: Major S&T Programs and Projects in the Ministry of Environment (MOE) Budget for JFY2011

Program or Project	Proposed JFY2011 Budget (¥Million)	New or Not
Acceleration of bio energy introduction	2,355	
Acceleration of hot spring energy use	450	
Demonstration of wind power generation	582	New
Comprehensive research on environment	8,007	
R&D on global warming	6,200	
International credit mechanism for CO2 emission/absorption	3,042	

Contribution to the International Biodiversity Treaty	1,038	
Global-scale biodiversity monitoring program	510	
National strategy for bio diversity	37	New
Promotion of activities to preserve Satoyama (harmony between human being and nature)	91	
Facilities for endangered species	40	New